

Research for the Classroom

Seize the Data: Embracing Information

Reconsidering Data

Data is probably not a term that drew most of us into the profession of teaching English language arts.

The word *data* connotes math, science, and technology: digits and quantifiable units. Data imply objectification—reducing ideas, and perhaps even students and teachers, to products that can be measured and compared. Ironically, however, this conception of data is itself reductive, and it minimizes the richness and potential of data. Data are much more than numbers and widgets; they involve a wealth of complex and nuanced information—there for our analysis and use.

Data surround us. We use facts and figures in our experiences every day: when we decide where to buy groceries (distance, aesthetics, quality, parking) and which brand of peanut butter to purchase (taste, nutritional value, cost); when we determine our exercise regimen (time, enjoyment of the activity, our desire for a guilt-free slice of cheesecake later); and even when we consider the relative merits of a partner (physical appeal, trustworthiness, desire for children, appreciation

of long walks on the beach, etc.). *Data* is simply a scholarly word for information—which we can choose to examine carefully, or ignore (often at our own peril).

In the field of education, data are collected incessantly. Public attention, naturally, tends to focus on the data that are gathered, analyzed, and used by large organizations, such as state and federal agencies or foundations. Because they are designed to be vast in scale and politically expedient, these data are comprised primarily

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of standardized assessment results, which do not consider the social inequities and challenges that our students face (Apple; Dorn; Nichols and Berliner). Teachers know that a standardized test will never measure a student's disposition toward reading or writing. Despite their myriad limitations, published data continuously demonstrate that many teachers and students are failing to meet standardized expectations. Paradoxically, perhaps, data can save

us. We cannot control the way data are used by state and federal political leaders. We can, however, control the way we use data in our classrooms: to support what we believe is important. We can control the reforms that occur in our classrooms and, through these actions, we can seek to influence what occurs in the world.

The effectiveness of data is determined entirely by how it is used. We can use data to reveal and clarify reality or to reinforce what we think we already know. The challenge, as explained by Sharon Begley, science columnist for *Newsweek* magazine, is to avoid “confirmation bias,” that is, the human desire to use data to confirm existing beliefs. In a classroom, where teachers face a variety of responsibilities simultaneously, it can be difficult to focus on one piece of data, much less ignore the inclination to attend to information that supports what we believe and discount information that refutes our preconceptions.

A few years ago, in this column, I explained how I had stumbled on an example of this distinction with a piece of data (in this case a “ticket out the door”) in my own classroom (Gorlewski). After what I had thought was a particularly effective lesson on iambic pentameter, I collected an index card from each student.

Students were to have written one line of iambic pentameter on these cards. I was certain that the cards would reveal that students had learned the characteristics of this meter (this was my preconception, supported by many bits of data that had emerged during class). Instead, the cards exposed the fact that at least two-thirds of the class did not understand and could not reproduce a line of iambic pentameter—despite having been provided with numerous examples and instructed to memorize one.

For me, this experience crystallized Begley's notion of confirmation bias (although I had yet to read her piece and, therefore, did not have a name for the idea) and reinforced the importance of collecting assessment data to support student learning. I am returning to this topic now because, in this era of increasing standardization and assessment-based accountability, teachers may be urged to overlook their own ability to collect, analyze, and report meaningful data about student performance—even though these data can be far more useful and significant than scores on mandated examinations. In fact, if teachers are to maintain our professional status and resist the well-documented negative effects of standards-based reform initiatives, we must embrace the data in our classrooms.

Finding a Focus

First, the challenges of a good teacher's life must be acknowledged. The demands in terms of time, effort, and emotional and intellectual energy are significant and cannot be minimized. That said, if these challenges

become distractions from the work of instruction, they diminish our teaching effectiveness. Using data effectively is an excellent way to focus and improve in any endeavor. To lose weight and increase fitness, we count things: calories (consumed and burned), carbohydrates, and minutes of exercise, for example. To prepare for retirement, we investigate options and calculate current requirements for savings and investment. Achieving goals in our classroom involves a similar type of focus. We could never improve our level of fitness if we didn't have a sense of three things:

1. Where are we now?
2. Where do we want to be?
3. How will we know when we get there?

It's important to note that there are various ways to answer these questions. "Where we are now" in terms of fitness may involve knowing how many pounds you weigh, what size you wear, how many inches your waist measures,

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how many miles you can run, or what your body-mass index is. Fitness can also be related to such things as how much water you drink, whether you take vitamin supplements, and whether you visit a physician regularly. Even though these possibilities provide only a fraction of the ways that you might be able to answer the question "Where are we now?" with respect to fitness, it is clear that the range of options can be overwhelming, a reality that often

results in paralysis rather than action. These conditions are easily associated with classroom life, where the extent of data around us can be so vast as to seem insurmountable. Unfortunately, ignoring data that we are not *required* to collect means that someone *else* is allowed to decide what is collected, analyzed, and reported.

Fortunately, however, much like with a new fitness regimen, the solution is accessible through the application of a cliché: less is more. We are more likely to succeed if we focus on fewer pieces or categories of information. You might want to limit calories and increase activity, but if you also try to monitor and regulate your intake of sodium, protein, vitamins, minerals, carbohydrates, and fat, you are likely to fail simply because there is too much information to track. To be used effectively, data must be focused.

Determining Useful Data

Because a classroom learning environment is comprised of human beings, the idea of quantifying useful data can seem impersonal and cold, something better left to district, state, and federal entities. But, as mentioned earlier, we evaluate and act on data with respect to people in our lives all the time, even if we don't formally analyze and report results. (This lack of analysis makes our personal lives rather vulnerable to confirmation bias, but that's a problem for a column in an entirely different journal.) We should view our classrooms, therefore, as a lab overflowing with information. It is our job to figure out how to use that information.

Since our goal is effective instruction, it is logical to begin by identifying our learning targets (that is, *Where do we want to be?*): What skills, knowledges, and dispositions do we hope students will leave our classrooms with? Clear statements of learning targets will focus our data collection and analysis. Examples of effective learning targets include a wide range of possibilities:

- Students will be able to identify two character traits demonstrated by the protagonist and provide evidence from the text supporting each trait in a well-constructed paragraph.
- Students will demonstrate respect and consideration in all classroom activities.
- Students will be able to name a favorite poem and provide an expressive oral interpretation of that poem for the class.
- Students will come to class prepared with all materials.
- Students will be able to debate the ethical merits of one side of a controversial contemporary issue using relevant rhetorical devices.
- Students will be seated and engaged in an opening activity within 30 seconds of the start of class.

As the professional educator on site, it is up to you to determine and prioritize essential learning targets. If you try to accomplish too many, it is likely that none will be achieved.

Establishing the Baseline

Next, we need to engage with data to consider the three questions listed earlier. Answering the ques-

tion *Where are we now?* requires collecting baseline data, or information that clarifies the current situation. For fitness, it could be my starting weight, size, calorie consumption, or activity level.

Without a starting weight, you can't quantify the pounds you lose. In terms of learning targets, then, data are critical for recognizing teaching effectiveness. Baseline data, like all data, can be collected in a variety of ways, including checklists, surveys, pretests, and anecdotal records. The key, however, is to collect data regarding all affected students. Once an instructional problem has been identified, categories and sources of data will emerge and you can determine which ones will be most suitable for collection and analysis. For example, if students have difficulty developing ideas in writing, your baseline data might consist of a set of essays in which this skill is sufficiently evident. As you work through the instructional process, you will provide multiple opportunities for assessing students' progress toward achieving this instructional target, analyze these assessments, and maintain ongoing records of this process. These acts, as familiar as they seem, exemplify the use of data for research in your classroom.

Be sure to keep in mind that the human tendency toward confirmation bias makes you want to believe that when one student volunteers a correct answer, the whole class understands the concept. Conversely, if 23 of your 24 students are already coming to class prepared with all materials, you may instead decide to focus your efforts on that one "outlier" student (who makes it seem as

though the class, as a whole, is never ready). Sometimes a single "case study" can inform our practice in ways that benefit many students.

Once you have established baseline data, the next step is to develop and implement instructional activities designed to move students from where they are to where you want them to be, with respect to your learning targets. Although the work of instructional planning is intense and demanding, the more specific and clear your learning targets are, the easier this will be.

The Finish Line


How will we know when we get there? OK, the instruction/assessment process is really more like an outdoor track than a straight course; the finish line also marks the next starting point. Nonetheless, collecting data after a lesson is complete is crucial; otherwise, how will you know if the target was achieved? Fortunately, having a clearly written target makes the determination of relevant data straightforward. If my goal is to lose 15 pounds and I lost 8, my status is clear. I also have a decision to make (another two weeks of calorie counting or uncomfortably tight clothes). The same is true in the classroom. If your assessment data indicate that several of your students did not write paragraphs supporting identified character traits, you have a decision to make: address the issue by revisiting the learning target or move on with the expectation that the skill will be reinforced through upcoming instructional activities.

Seizing the Data

Schools and teachers are inundated with pressures from forces outside the realm of professional expertise, so it is critical for educators to develop comfort and proficiency in the use of data. Because teachers

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serve the interests of our students directly, we are most capable of determining the skills, knowledges,

and dispositions that they will need in the future. Although state and federal standards provide guidelines for classroom learning targets, data provided by standardized assessments do little to promote the success of our youth—especially those most in need of support. If we do not use data to achieve our goals, we relinquish our professional responsibility to political leaders who will not hesitate to use data to achieve theirs. Classroom data—collected, analyzed, reported, and acted on by teachers—offer the possibility to enhance instructional effectiveness and, ultimately, may be the means to realize truly positive educational reform. 

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